

PATENT

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Claims:

1. A downhole deployment valve (DDV) system, comprising:
a tubular string within a wellbore, the tubular string having a valve member for selectively obstructing a flow path through a bore of the tubular string; and
an object stopping assembly for stopping an object falling toward the valve member prior to the object contacting the valve member.
2. The DDV system of claim 1, wherein the assembly comprises at least one stop member selectively movable to at least partially obstruct the bore.
3. The DDV system of claim 1, wherein the assembly comprises a diverter disposed above the valve member, the diverter movable between an open position and a diverting position.
4. The DDV system of claim 1, wherein the assembly comprises an upward opening flapper member.
5. The DDV system of claim 1, wherein the assembly comprises an acceleration actuated brake on the object.
6. The DDV system of claim 5, wherein the brake comprises a friction drag block in contact with a surrounding tubular to provide a drag force, the drag block biased from setting an anchor of the brake until reaching a predetermined drag force.
7. The DDV system of claim 1, further comprising an actuator member that actuates both the valve member and the assembly.
8. The DDV system of claim 1, further comprising a control line that substantially simultaneously supplies fluid pressure to an actuator for the valve member and an actuator for the assembly.

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9. The DDV system of claim 1, further comprising a shock attenuating material above the valve member.
10. A method of using a downhole deployment valve (DDV) in a wellbore, comprising:
 - actuating a safety mechanism above a valve member of the DDV, wherein actuating the safety mechanism moves a member of the safety mechanism to at least partially interfere with a bore above the valve member; and
 - closing the valve member.
11. The method of claim 10, wherein closing the valve member and actuating the safety mechanism occur substantially simultaneously.
12. The method of claim 10, wherein closing the valve member and actuating the safety mechanism are caused by fluid pressure supplied to a control line common to the valve member and the safety mechanism.
13. The method of claim 10, wherein the safety mechanism is a diverter.
14. The method of claim 10, wherein the safety mechanism is a barrier.
15. A downhole deployment valve (DDV) system, comprising:
 - a first valve member for selectively controlling a pressure below the valve member; and
 - a second valve member below the first valve member, the second valve member having an aperture therein that permits fluid flow through the second valve member.
16. The DDV system of claim 15, wherein the second valve member is a metering flapper.

17. The DDV system of claim 15, wherein the first and second valve members actuate in series.
18. The DDV system of claim 15, further comprising a shock attenuating material above the valve member.
19. A downhole deployment valve (DDV) system, comprising:
a first DDV disposed in a tubular string, the first DDV having a valve member capable of selectively controlling a pressure below the valve member; and
a second DDV disposed in the tubular string, the second DDV having a redundant valve member capable of selectively controlling a pressure below the redundant valve member.
20. The DDV system of claim 19, wherein the first and second DDV actuate in parallel by separate actuators that operate the valve members substantially simultaneously.
21. The DDV system of claim 19, further comprising a diverter above the valve member.
22. The DDV system of claim 19, further comprising a barrier above the valve member.
23. The DDV system of claim 19, further comprising a shock attenuating material above the valve member.